Journal of Intelligent and Robotic Systems 3 (1990)

Contents of Volume 3

Volume 3 No. 1 1990

Special Issue on

INTELLIGENCE IN ROBOTICS AND MANUFACTURING

Edited by

MO JAMSHIDI

The University of New Mexico, Albuquerque, U.S.A.

MO JAMSHIDI / Editorial: Intelligence in Robotics and Manufacturing 1

VILMA M. IRIZARRY-GASKINS and TIEN-CHIEN CHANG / Knowledge-Based Process Planning for Electronic Assembly 3

ZHENG GENG and MO JAMSHIDI / Learning Control System Analysis and Design Based on 2-D System Theory 17

ANDREW KUSIAK / Manufacturing Systems: A Knowledge- and Optimization-Based Approach 27

BILL HORNE, M. JAMSHIDI, and NADER VADIEE / Neural Networks in Robotics: A Survey 51

PETER O'GRADY and KWAN H. LEE / A Hybrid Actor and Blackboard Approach to Manufacturing Cell Control 67

FARZAD POURBOGHRAT / Toward the Intelligent Control of Robots 73

Book Reviews:

WESTEX-87: Proceedings of IEEE Conference on Expert Systems (2–4 June 1987, Anaheim, California) (SPYROS TZAFESTAS) 87

SCIENTIFIC FUNDAMENTALS OF ROBOTICS: 1. M. Vukobratovic and V. Potkonjak: *Dynamics of Manipulation Robots*; 2. M. Vukobratovic and D. Stokić: *Control of Manipulation Robots: Theory and Application*: 3. M. Vukobratovic and M. Kircanski: *Kinematics and Trajectory Synthesis of Manipulation Robots*: 4. M. Vukobratovic and N. Kircanski: *Real Time Dynamics of Manipulation Robots*; 6. M. Vukobratovic and V. Potkonjak: *Applied Dynamics and CAD of Manipulation Robots* (SPYROS TZAFESTAS) 87

David Anderson: *Artificial Intelligence and Intelligent Systems – The Implications* (SPYROS TZAFESTAS and ARISTIDES ELIANOS) 89

H. Mortimer: *The Logic of Induction* (SPYROS TZAFESTAS and C. BOTSARIS) 89

Calendar of Events 91

Volume 3 No. 2 1990

HENRI PRADE / A Two-Layer Fuzzy Pattern Matching Procedure for the Evaluation of Conditions Involving Vague Quantifiers 93

J. ZHANG, P. D. ROBERTS, and J. E. ELLIS / Fault Diagnosis of a Mixing Process Using Deep Qualitative Knowledge Representation of Physical Behaviour 103

A. FAMILI / Integrating Learning and Decision-Making in Intelligent Manufacturing Systems 117

MING RAO, TSUNG-SHANN JIANG, and JEFFREY J.-P. TSAI / Integration Strategy for Distributed Intelligent Systems 131

SADASHIV ADIGA and MILIND GADRE / Object-Oriented Software Modeling of a Flexible Manufacturing System 147

M. G. VENKATESHMURTHY, T. V. GEETHA, and R. K. SUBRAMANIAN / Extraction and Representation of Facts from Legal Briefs 167

TAG GON KIM / Hierarchical Scheduling in an Intelligent Environmental Control System 183

Book Review:
M. W. Spong and M. Vidyasagar: *Robot Dynamics and Control* (KIMON P. VALAVANIS) 195

Calendar of Events 197

Volume 3 No. 3 1990

Special Issue on

ROBOT MODELLING AND CONTROL

Edited by

I. TROCH, P. KOPACEK, and K. DESOYER

I. TROCH, P. KOPACEK, and K. DESOYER / Robot Modelling and Control 199

BRUNO SICILIANO / Kinematic Control of Redundant Robot Manipulators: A Tutorial 201

R. GOREZ and J. O'SHEA / Robots Positioning Control Revisited 213

A. ABBATI-MARESCOTTI, C. BONIVENTO, and C. MELCHIORRI / On the Invariance of the Hybrid Position/Force Control 233

F. PFEIFFER and K. RICHTER / Optimal Path Planning Including Forces at the Gripper 251

WOLFGANG M. GRIMM and PAUL M. FRANK / Robust Pole Assignment for Incomplete Nonlinear Decoupling Applied to Robots 259

Calendar of Events 291

Volume 3 No. 4 1990

MUKHTAR HUSSAIN and JATINDER SINGH BEDI / Parallel Processing in Knowledge-Based Diagnostic Systems 293

KEIGO WATANABE and SPYROS G. TZAFESTAS / Learning Algorithms for Neural Networks with the Kalman Filters 305

KIMON P. VALAVANIS and SOCRATES J. CARELO / An Efficient Planning Technique for Robotic Assemblies and Intelligent Robotic Systems 321

CLEMENTINA MLADENOVA / A Contribution to the Modelling and Control of Manipulators 349

SCOTT R. BOUNDS, SHANNON E. SCHROER, and BERNARD J. SCHROER / Experimentation with Telerobotics for Use in Space Systems 365

BERTA BUTTARAZZI and ANTONIO FICOLA / Modelling Manufacturing Systems: A Birth-Death Approach 379

Book Reviews:

T. Kemeny and K. Havrilla (eds): *Intelligent Measurement* (SPYROS TZAFESTAS and NIKOS THEODOROU) 393

D. N. L. Levy and D. F. Beal (eds): *Heuristic Programming in Artificial Intelligence* (SPYROS TZAFESTAS) 394

J. J. Craig: *Introduction to Robotics Mechanics and Control* (KIMON P. VALAVANIS) 394

Robert B. Fisher: *From Surfaces to Objects* (FIVOS HATZIVASSILIOU and SPYROS TZAFESTAS) 395

Peter K. Allen: *Robotic Object Recognition Using Vision and Touch* (SPYROS TZAFESTAS and FIVOS HATZIVASSILIOU) 396

Calendar of Events 399

Information for Authors 403

Name Index to Volume 3 409

Key Word Index to Volume 3 411